

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

To:

see form PCT/ISA/220

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing

(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/EP2005/002243

International filing date (day/month/year)
03.03.2005

Priority date (day/month/year)
03.03.2004

International Patent Classification (IPC) or both national classification and IPC
H01M8/24, H01M8/02

Applicant
IRD FUEL CELLS AS

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1 bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA:



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**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/EP2005/002243

Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material:
☐ a sequence listing
☐ table(s) related to the sequence listing
 - b. format of material:
☐ in written format
☐ in computer readable form
 - c. time of filing/furnishing:
☐ contained in the international application as filed.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/EP2005/002243

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	
	No: Claims	1-4
Inventive step (IS)	Yes: Claims	
	No: Claims	1-4
Industrial applicability (IA)	Yes: Claims	1-4
	No: Claims	

2. Citations and explanations

see separate sheet

Re Item V.

- 1 Reference is made to the following documents:

D1 : US 6 174 616 B1

D2 : EP 1 220 347 A

2 NOVELTY

- 2.1 The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of **claims 1-4** is not new in the sense of Article 33(2) PCT.

- 2.1.1 Document D1 discloses (the references in parentheses applying to this document):

-A bipolar separator plate for use in a fuel cell, said separator plate comprising an anterior cathodic flow field, a posterior anodic flow field (cf. figures 2 and 11 and description c. 5, l. 50-53, the mentioned option of the plate 200 being designed as bipolar implies the flow fields on its opposite sides are respectively an anodic and a cathodic flow field) and manifolds (members 206 and 208 in figure 2, description c. 5, l. 34-54, detailed in figures 8 and 9) for flow of reactants from the anterior cathodic flow field to the posterior anodic flow field and from the posterior anodic flow field to the anterior cathodic flow field.

-Anodic flow field being at a 90 degree angle with respect to the cathodic flow field (c. 14, l. 52-57).

-Active and passive manifolds (fig. 11 and description c. 12, l. 8-46).

-Separator plates being arranged at a 90 degree angle with respect to each other (cf. figures 1, 13 and description c. 13, l. 7 - c. 14, l. 16).

As such, the subject-matters of the **independent claim 1** and the **dependent claims 2-4** are disclosed by document D1 and therefore considered to lack novelty.

- 2.1.2 Document D2 discloses (see the abstract, figures 2 and 3, and description paragraphs 15 and 27-29):

- A bipolar separator plate for use in a fuel cell, said separator plate comprising an anterior cathodic flow field, a posterior anodic flow field (figures 2 and 3 show opposite sides of plate 10) and manifolds (members 15a, 15b, 25a, 25b) for flow of reactants from the anterior cathodic flow field to the posterior anodic flow field and from the posterior anodic flow field to the anterior cathodic flow field.
- Anodic flow field being at a 90 degree angle with respect to the cathodic flow field (cf. figure 2 vs. figure 3).

These features therefore also anticipate claims 1 and 2.

3 INDUSTRIAL APPLICABILITY

- 3.1 The subject matter of claims 1-4 meets the requirements of Article 33(4) PCT.